For Jim

ABSTRACT OF PAPER
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Title: The Ultrastructural Changes in Chicken Blastoderms During Pre-incubation Storage - an Interpretation

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When fertile chicken eggs are held for extended periods of time before incubation, their blastoderms gradually lose capacity for normal development. This occurs even under the most optimal storage conditions. The present report will supply data bearing on the ultrastructural aspects of cellular morphology in the affected blastoderms, together with an interpretation of these observed retrogressive changes. In the nucleus, the retrogressive changes within such blastoderms include a gradual shortening and clumping of individual chromosomes, a process which in the end produces an electron - dense chromatin meshwork. The nucleoli usually disappear or at least become unrecognizable within that meshwork. The nuclear pores grow fewer in number, with no evidence of patency in them. In the cytoplasm, the mitochondrial cristae are increasingly less distinct in outline; eventually they may disappear altogether. The polysomes tend to break up into individual ribosomes. The microtubules now become less prominent. In essence, all these signs of morphological degradation clearly reflect the growing inability of cells to synthesize protein, as exemplified by the breakdown of polysomes, or to support other basic cellular processes, i.e. electron transport and oxidative phosphorylation, as exemplified by the disorganization within mitochondria.

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Needs Glutaraldehyde
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(scheduled for 4:30 pm Aug 4)